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MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WASTE MANAGEMENT ●

MOBILE SOURCE AIR POLLUTION CONTROL

A/C NO. 37-A

July 22, 1975

PAGE 1 OF 4 PAGES

Subject: Alternative Mileage Accumulation Procedure

A. Purpose

The purpose of this Advisory Circular is to provide an alternative mileage accumulation driving schedule. The maximum speed specified in the Durability Driving Schedule in Appendix IV of 40 CFR Part 85 exceeds the legal maximum speed on United States roads, which is 55 mph. This Advisory Circular supersedes Advisory Circular 37 which is obsolete and should be discarded.

B. Background

Part 86.077-26 of the Recodification of Motor Vehicle Emissions Regulations effective July 30, 1975, (former Sections 85.075-7, 85.275-7, and 85.376-7 of 40 CFR provides for a modified Durability Driving Schedule if "approved in advance by the Administrator." The reduction in maximum speed limits on public roads imposed to conserve fuel during the current and anticipated national fuel conservation effort, establishes a need for an Alternative Durability Driving Schedule operating within the lowered speed limits.

Advisory Circular 37 described an Alternative Durability Driving Schedule which a manufacturer could use if accumulating mileage on public highways. Manufacturers using test tracks or mileage accumulation dynamometers were still required to use the durability schedule of Appendix IV, the rationale being that the lowered maximum speed limit was only a temporary measure, due to expire in June, 1975. However, the Federal Aid Highway Amendments of 1974 removed the expiration date for the 55 mph speed limit. Therefore, EPA has concluded that it is reasonable to allow the use of the Alternative Durability Driving Schedule for mileage accumulation on tracks and mileage accumulation dynamometers, as well as on public roads, since this schedule reflects the national speed limit for the foreseeable future.

EPA also recognized the fact that countries other than the United States are experiencing fuel shortages, and have also instituted reduced speed limits as an energy conserving measure. In some cases the reduced maximum speeds are closer to 50 mph, rather than 55 mph. This could create a hardship for manufacturers accumulating mileage on these roads.

C. Applicability

This circular is effective immediately and is applicable to gasoline-fueled and Diesel light duty vehicles and light duty trucks.

D. Procedure

1. Appendix IV of 40 CFR Part 85 describes a basic driving schedule consisting of 11 laps of a 3.7 mile closed course and prescribes the driving mode and speed for each lap.

2. To conform to highway speed limits, an alternative driving schedule has been devised. In this alternative driving schedule, the first nine laps will be driven in the manner described in Appendix IV of 40 CFR Part 85. The tenth lap is to be driven at a constant speed of 50 or 55 mph (depending upon which schedule is being used) after a normal acceleration from the stop following lap number 9 and preceeding to a normal deceleration to a stop before lap 11.

The 11th lap is begun with a wide-open-throttle acceleration to 50 or 55 mph, as applicable, a fast deceleration to a stop, and three subsequent wide-open-throttle accelerations and fast decelerations at evenly spaced intervals in the 3.7 mile lap.

E. Discussion

1. A comparison of the present 70 mph maximum speed durability driving schedule and the alternative 50 or 55 mph schedule is shown in Enclosure 1. It also serves as a guide for those manufacturers who elect to use the alternative 50 or 55 mph maximum speed schedules in laying out a mileage accumulation route.

2. The comparison is based on an assumed uniform acceleration rate of 3 mph per second (4.4 ft/sec^2) and a uniform wide-open-throttle acceleration rate of 5 mph per second (7.3 ft/sec^2). The rates of deceleration are also assumed to be uniform with normal deceleration being 6 mph per second (8.8 ft/sec^2) and a fast rate of deceleration being 10 mph per second (14.7 ft/sec^2).

3. The actual average speed may be somewhat less than the calculated average speed since no allowance is made for driver reaction time.

4. Differences between the comparison chart in Enclosure 1 of Advisory Circular 37 and the chart in Enclosure 1 of this circular are a result of recalculation of the figures. The revised figures reflect no change in the actual driving schedules, but are simply corrected values which more accurately describe the respective schedules.

F. Approval of Mileage Accumulation Procedure

1. Each application for certification must include a description of the mileage accumulation procedure. The regulations require that the

procedure be approved or disapproved, in writing, by EPA. EPA will approve an alternative procedure as described in this Advisory Circular for manufacturers who accumulate mileage on public roads, on dynamometers, or on test tracks. EPA expects that manufacturers requesting the use of an alternative schedule will usually specify the 55 mph schedule. The 50 mph schedule will only be approved for use in situations where manufacturers must accumulate mileage on public highways which have a maximum speed limit of less than 55 mph.

2. As in the past, EPA may approve procedures which have substantially the same average speed, distribution of speeds, number of stops per mile, and number of accelerations per mile to the various speeds as the three alternatives outlined in Enclosure 1.

Mobile Source Air Pollution Control

ENCLOSURE 1

<u>Driving Mode</u>	<u>Events per mile</u>		
	<u>70 mph Top Speed</u>	<u>55 mph Top Speed</u>	<u>50 mph Top Speed</u>
Stops	0.96	1.01	1.01
Normal acceleration from stop	0.91	0.91	0.91
Normal acceleration from 20 mph	1.11	1.11	1.11
Wide-open-throttle acceleration and fast deceleration	0.05	0.10	0.10
Idle time	13.64 sec	13.64 sec	13.64 sec
<u>Speed-mph</u>	<u>Percent of Total Miles</u>		
30	16.1	16.1	16.1
35	22.6	22.6	22.6
40	20.9	20.9	20.9
45	6.4	6.4	6.4
50			16.7
55	8.6	16.4	
70	7.9		
Variable (acceleration and deceleration)	<u>17.5</u>	<u>17.6</u>	<u>17.3</u>
TOTAL	100.0	100.0	100.0
Average speed, total distance traveled divided by total time (including idle time)	30.72 mph	30.35 mph	29.90 mph
Hours to complete 50,000 miles	1628	1647	1672

*including "stops" without a 15 second idle period on Lap 11.